

Abstract

A method and system that detect image pixels of noisy and sharp image edges, and enhance such pixels differently than other pixels, so that noise around the detected pixels is essentially not boosted. A detection process is conducted on a pixel basis, wherein each pixel is checked together with its neighboring pixels inside a rectangular window centered around a selected/current pixel. To determine whether the current pixel belongs to a noisy and sharp vertical image edge, three columns of pixels centered with the current pixel are used. The mean value and variance value of the pixels in each column are calculated. Based on the three mean values and the three variance values, it can be determined if the current pixel is a pixel in a noisy and sharp vertical edge. Similarly, the current pixel can be checked to determine if it is a pixel in a noisy and sharp horizontal image edge. As such, the current pixel can be classified as either a regular pixel, a pixel in a noisy and sharp vertical image edge, or a pixel in a noisy and sharp horizontal image edge. If the current pixel is classified as a regular pixel, image detail enhancement is performed normally at the current pixel location. Otherwise, mean values of pixels in a rectangular window

centered with the current pixel are used to calculate the unsharp signal. The unsharp signal is then processed as in the case of the regular pixels to obtain a detail enhanced image.